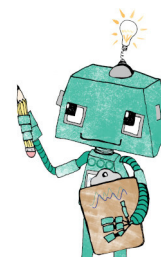


Object Oriented Programming in R

The training course will cover R object-oriented programming techniques. We'll discuss what OOP is and the different varieties within R. Beginning with the popular S3 and S4 OOP frameworks, we'll finish with the new {R6} package that is used extensively in Shiny applications. By the end of the course, participants will be able to use OOP within their own code.



Course Outline

- **Advanced Functions:**
 - Scoping rules (including lexical scope)
 - The ... argument
 - Argument matching
- **S3 classes:**
 - Introduction to object-oriented programming
 - Constructing S3 objects
 - Drawbacks
- **S4 classes:**
 - Creating and using S4 classes
 - Differences between S3 and S4 classes
- **R6 classes**
 - Differences between {R6} and S3/S4
 - Mutable states
 - Creating methods
 - Shallow and deep copies

Learning Outcomes

By the end of the course, participants will be able to...

- Select the most appropriate form of OOP for their task
- Leverage encapsulation, polymorphism and inheritance to provide a nice user interface to their code
- Write functions with rich results, user-friendly display and programmer-friendly internals
- Extend the functionality of functions for new object types
- Write code that is extensible by others

Attendee Feedback

- “Really great course! Useful content that will greatly benefit me in my future R projects.”
- “The instructor was excellent. The course material that was written and that prepared for the R sessions was very good, and is a resource I can draw upon in the future.”
- “The course was well structured had lots of useful examples and gave the opportunity to practice the skills taught.”